What is claimed:

1. The method called "disease gene-discovery-by-positional searching" ("DGDPS") that was used for discovering disease specific genes in humans and animals, including coding sequences wherein the sequence IDs are, SEQ ID NO:1, SEQ ID NO:5, SEQ ID NO:14, regulatory sequences wherein the sequence IDs are SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, and proteins whose sequence IDs are SEQ ID NO:2, SEQ ID NO:6, SEQ ID NO:15. The proteins expressed by these genes in humans are causative factors of the symptoms of Alzheimer's disease, Down syndrome and other related neurodegenerative diseases..

2. Nucleotides # 204 - 241 of the nucleic acid molecule wherein the sequence is SEQ ID NO:1, nucleotides 55 - 156 of the nucleic acid molecule wherein the sequence is SEQ ID NO:5, and nucleotides 97 - 132 wherein the sequence is SEQ ID NO:14; all discovered by the method of claim # 1.

3. Amino acids 68 - 79 in the protein wherein the sequence is SEQ ID NO:2, which is encoded by nucleotides 204 - 241 of claim # 2, SEQ ID NO:1, amino acids 20 - 51 in the protein wherein the sequence is SEQ ID NO:6, which is encoded by nucleotides 55 - 156 of claim # 2, SEQ ID NO:5, amino acids 33 - 44 in the protein wherein the sequence is SEQ ID NO:15, which is encoded by nucleotides 97 - 132 of SEQ ID NO:14 of claim # 2.

4. ELISA methods described in this invention, and modification of these ELISA methods inlcuding the antibodies, that detect the amino acid sequences or part of the amino acid sequences of the proteins of claim # 3 wherein these sequences are amino acids 68 - 79 in SEQ

ID NO:2, amino acids 20 - 51 in SEQ ID NO:6, amino acids 33 - 44 in SEQ ID NO:15, in body fluids, e.g. saliva, blood, plasma, serum, spinal fluid or urine, of humans with Alzheimer's disease or other neurodegenerative diseases before, during or after clinical symptoms of the diseases are visible, or in material isolated from cells or human tissue antemortem or postmortem.

5. The methods of claim # 4 that detect endogenous antibody or antibodies that are capable of neutralizing the molecules of claim # 3 by combining with amino acids 68 - 79 in SEQ ID NO:2, amino acids 20 - 51 in SEQ ID NO:6, amino acids 33 - 44 in SEQ ID NO:15 of claim # 2, in body fluids of humans with Alzheimer's disease or other neurodegenerative diseases before, during or after clinical symptoms of the diseases are visible, or in material isolated from cells or human tissue antemortem or postmortem.

6. Antibodies, anti-peptide reagents or other reagents prepared and designed to act especially, but not limited to, against the protein sequences of claim # 4 and claim # 5, that is amino acids 68 - 79, SEQ ID NO:2, amino acids 20 - 51, SEQ ID NO:6, and amino acids 33 - 44, SEQ ID NO:15, expressed in humans with Alzheimer's disease or other related neurodegenerative diseases, used to prevent or treat these disease conditions, or idiotypic antibodies prepared and designed to block the activity of antibodies of claim # 4 which may become involved in inflammatory reactions in the late stages of Alzheimer's disease and other related neurodegenerative diseases.

7. Methods of active vaccination to prevent and stop initiation and progression, respectively, of Alzheimer's disease, other associated diseases, and other diseases in humans, wherein the "vaccine" includes an endogenous protein or fragment of an endogenous protein, e.g. the amino acid sequences of claim # 3, which is expressed, specifically, in a disease specific manner in a human.

8. Methods of passive vaccination to prevent and stop initiation and progression, respectively, of Alzheimer's disease, other associated diseases, and other diseases in humans, wherein the vaccine includes human antibodies or fragments of human antibodies against the proteins or fragments of proteins of claim # 7 (see also WIPO publications WO 99/04273 and WO 98/07851).

9. The methods of claims # 7 and claim # 8 wherein the protein or fragment of the protein included in the vaccine is chemically synthesized or the antibody or antibody fragment included in the vaccine, is obtained by recombinant and humanizing techniques.

10. Anti-DNA antibodies and other reagents prepared and directed against specific nucleotide sequences in the genes from which the cDNAs (mRNAs) of claim # 2 are transcribed wherein these molecules have the sequences, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:1, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, to prevent and stop the initiation and progression, respectively, of Alzheimer's disease and of other related neurodegenerative conditions.